

2002-165480/22 B07 D21 E24 F06 (D18) **HENK 2001.01.25**  
 HENKEL KGAA\* \*DE 10103160-A1  
 2001.01.25 2001-1003160(+2001DE-1003160) (2001.11.29) A61K 7/13  
**New and known hair dyes containing m-phenylenediamines give good results, especially with 2,4,5,6-tetraaminopyrimidine as developer**  
**C2002-051225**  
 Addnl. Data: ROSE D, HOEFFKES H, MEINIGKE B

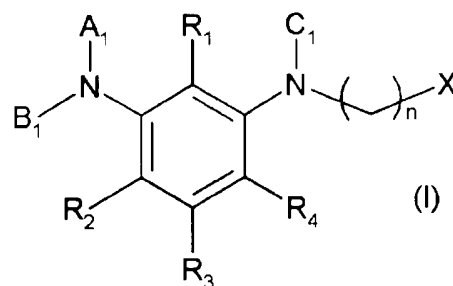
#### NOVELTY

The coupler component in a dyeing agent also containing a carrier and a developer component and used for keratinous fibers, especially human hair, is an m-phenylenediamine derivative (I) or its salts. Some (I) are claimed as new compounds.

#### DETAILED DESCRIPTION

The coupler component in a dyeing agent also containing a carrier and a developer component and used for keratinous fibers, especially human hair, is an m-phenylenediamine derivative of formula (I) or its salts.

B(7-D4C, 7-H, 10-A9B, 10-B1A, 10-B3A, 10-E2, 14-R2) D(7-B, 8-B6) E(7-D12, 10-B1A4, 24, 26-A3) F(3-F16, 3-F21, 3-F22, 3-F32) .7



A<sub>1</sub> = H, benzyl, 2-4C alkenyl, 1-4C alkyl or monohydroxyalkyl or 2-4C polyhydroxyalkyl;  
 B<sub>1</sub>, C<sub>1</sub> = H or 1-4C alkyl;  
 R<sub>1</sub> = H, halogen, 1-4C alkyl, monohydroxyalkyl or alkoxy or 2-4C polyhydroxyalkyl;  
 R<sub>2</sub>-R<sub>4</sub> = H, halogen, 1-4C alkyl, perfluoroalkyl, monohydroxyalkyl or alkoxy or 2-4C polyhydroxyalkyl, with the proviso that at

DE 10103160-A+

least one of R<sub>2</sub>-R<sub>4</sub> = H, halogen or 1-4C alkoxy;  
 X = pyridyl or C<sub>6</sub>H<sub>3</sub>R<sub>5</sub>R<sub>6</sub>;  
 R<sub>5</sub>, R<sub>6</sub> = H, OH, halogen, sulfonic acid or 1-4C alkyl or alkoxy; and  
 n = 1-4.

#### USE

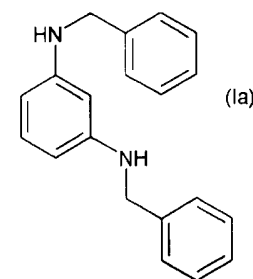
The composition is used as oxidation dye for keratinous fibers, particularly hair.

#### ADVANTAGE

(I) give better results in producing red and brown shades in combination with 2,4,5,6-tetraaminopyrimidine and 2-methylresorcinol than do known oxidation dye precursors. A wide range of red, brown and blue shades can be obtained.

#### SPECIFIC COMPOUNDS

Nine compounds (I) are specifically claimed, e.g. N,N'-dibenzyl-m-phenylenediamine of formula (Ia).



#### EXAMPLE

A red-brown hair coloring was obtained using 2,4,5,6-tetraaminopyrimidine as developer with N,N'-dibenzyl-m-phenylenediamine as coupler by treatment with 2 parts of a dye cream and 1 part 1% H<sub>2</sub>O<sub>2</sub> solution for 30 minutes at 32 ° C, the cream having been obtained by mixing at pH 10 with water (100 g) a composition comprising (A) the coupler and developer (each 7.5 mmol), Na sulfite (1 g), (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> (1 g), 25% ammonia (to give pH 10) and water (10 g) and (B) Hydrenol D (RTM : cetearyl alcohol)

DE 10103160-A+/1

2002-165480/22

(8.5 g), Lorol (RTM : coconut alcohol) (2 g), Eumulgin B2 (RTM : cetearylstearyl alcohol-20EO) (0.75 g), Texapon NSO (RTM : lauryl ether sulfate) (20 g), Dehyton K (RTM : N,N-dimethyl-N-(8-18C cocoamidopropyl) ammonium acetobetaine) (12.5 g) and water (30 g).

#### TECHNOLOGY FOCUS

Organic Chemistry - Preferred Developer: The developer component is a pyrimidine-, pyrazole-, p-aminophenol- or p-phenylenediamine-derivative, selected from p-phenylenediamine, p-toluenediamine, 2-(β-hydroxyethyl)-p-phenylenediamine, N,N-bis-(β-hydroxyethyl)-p-phenylenediamine, N,N'-bis-(β-hydroxyethyl)-N,N'-bis-(4'-aminophenyl)-1,3-diaminopropan-2-ol, bis-(2-hydroxy-5-aminophenyl)methane, N,N'-bis-(4'-aminophenyl)-1,4-diazacycloheptane, 1,10-bis-(2',5'-diaminophenyl)-1,4,7,10-tetraoxadecane, p-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-2-aminomethylphenol, 4-amino-2-((diethylamino)methyl)phenol, o-aminophenol, 2-amino-4-methylphenol, 2-amino-5-methylphenol, 2-amino-4-chlorophenol, 2,4,5,6-tetraaminopyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, 2-hydroxy-4,5,6-triaminopyrimidine, 2-(dimethylamino)-4,5,6-

triaminopyrimidine, 2,4-dihydroxy-5,6-diaminopyrimidine, 2,5,6-triaminopyrimidine, 1-(2'-hydroxy-5'-aminobenzyl)-imidazolin-2-one or 4,5-diamino-1-(2'-hydroxyethyl)pyrazole.

Preferred Composition : An additional coupler component may be present, selected from 2-amino-3-hydroxypyridine, 2-amino-3-hydroxy-5-chloropyridine, 3-amino-2-methylamino-6-methoxypyridine, 2,5-diamino-2,6-dimethoxypyridine, 2,6-dihydroxy-3,4-dimethylpyridine, m-phenylenediamine, 2,6-bis-(2-hydroxyethylamino)toluol, 3-amino-2,4-dichlorophenol, 3-amino-2-chloro-6-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-(β-hydroxyethyl)amino-2-methylphenol, 5-amino-2-methylphenol, 2-methylresorcin, 2-(2',4'-diaminophenoxy)ethanol, 1,3-bis-(2',4'-diaminophenoxy)propane, resorcin, 4-chlororesorcin, resorcin monomethyl ether, m-aminophenol, 1,7-, 2,7- or 1,5-dihydroxynaphthalene, 4-hydroxyindole or 6-hydroxyindole.

Pharmaceuticals - Preferred Composition: The hair dye compositions can contain a wide range of additives, among which are anti-dandruff agents such as Piroctone- or Zinc-Olamine, and Climbazol. (18pp1958DwgNo.0/0)

DE 10103160-A/2